CLAIMS:

1. A sound reproduction or recording system comprising an audio signal input (1), an audio signal processor (2, DSP) and an audio signal output (1) wherein the audio signal processor comprises an attributor (25) for attributing a gain factor (z) to input signals (In) as a function of input level (y) with a functional relationship such that the functional relationship between gain factor (z) and input level (y) comprises a first (I) and second range (II), the first range (I) covering amplitudes in which mainly voiced phonemes are situated, the second range (II) situated at input levels (y) lower than those for the first range (I) and covering input levels in which mainly unvoiced phonemes are situated, wherein the functional relationship is such that the average gain factor for the first range (I) lies at least 6dB below that for the second range (II).

2. A sound reproduction or recording system comprising a digital audio signal input (1), a digital audio signal processor (2, DSP) and a digital audio signal output (1) wherein the digital audio signal processor comprises an attributor (25) for attributing a gain factor (z) to input signals (In) as a function of input level (y), wherein the functional relationship between gain factor (z) and the input level (y) is such that a first (I) and second range (II) are present, the first range (I) extending from a maximum value input level (MAX) downwards at least 10 dB, the second range (II) extending at input levels below the first range (II), said second range covering a range of 10 db or more, wherein the average gain factor (z) in the first range (II) is at least on average 6 dB lower than in the second range (II).

3. A sound reproduction system as claimed in claim 2, wherein the attributor (25) for attributing a gain factor (z) is arranged such that the first range (I) extends from the maximum (MAX) at least 15 dB, but not more 30 dB.

4. A sound reproduction or recording system as claimed in claim 1 or 2 wherein the attributor (25) for attributing a gain factor (z) is arranged such that the gain factor (z) in the first range (I) is at least 12 dB lower than in the second range (II).

5. A sound reproduction or recording system as claimed in claim 1 or 2, wherein the attributor for attributing a gain (z) is arranged such that average gain factor for ranges I and II is less than 12 dB, preferably less than 6dB, even more preferably less than 3 dB.

6. A sound reproduction or recording system as claimed in claim 1 or 2, wherein the system comprises a dynamic level detector (41, 111) having an input for the signal amplitude (In) and an output for providing an average level (y) over a predetermined time period.

7. A sound reproduction or recording system as claimed in claim 6, wherein the predetermined time period (T_a , T_r) is 1 to 5 milliseconds.

8. A sound reproduction or recording system as claimed in claim 1 or 2, wherein the attributor (25) for attributing a gain factor (z) is arranged such that the gain factor (z) in the first range (I) is on average below 10 dB, preferably below 6 dB.

9. A sound reproduction or recording system as claimed in claim 1 or 2, wherein the system comprises a determinator for determining a maximum input level of a received signal and a means for equating the maximum input level with the upper edge of the first range.

10. A sound reproduction or recording system as claimed in claim 1 or 2, wherein the attributor (25) for attributing a gain factor (z) to input signals (In) as a function of input level (y) is arranged such that the functional relationship between gain factor (z) and the input level (y) is such that between the first (I) and second (II) range a third, intermediate range (III) is present in which the gain factor (z) changes gradually.

11. A sound reproduction or recording system as claimed in claim 1 or 2, wherein the system comprises a sensor (26) for measuring background noise (N2), and an adjustor for adjusting the gain factor (z) in the second range (II) in dependency on the measured background noise (N2).

12. A sound reproduction or recording system as claimed in claim 1 or 2, wherein the attributor for attributing (25) a gain factor (z) is arranged such that the second range (II)

is, at a lower boundary value juxtaposed by a fourth range (IV) in which the gain factor is substantially zero.

13. A sound reproduction or recording system as claimed in claim 12, wherein the attributor (25) for attributing a gain factor (z) to input signals (In) as a function of input level (y) is arranged such that the second (II) and fourth (IV) range are separated by a fifth (V), intermediate range within which the gain factor (z) gradually changes.

14. A sound reproduction or recording system as claimed in claim 12 and 10 wherein the attributor for attributing (25) a gain factor (z) to input signals (In) as a function of input level (y) is arranged such that that the slope of the decrease in gain factor in the third range (III) is softer than the rise in gain factor in the fifth range (V).

15. A sound reproduction or recording system as claimed in claim 12, wherein the system comprises a measurer for measuring line or transmission noise (N1) or an input for a value for line or transmission noise (N1) and an adjustor for adjusting the transition point or transition range (V) from the second (II) to the fourth range (IV) in dependence on amount of line or transmission noise (N1).

16. A sound reproduction system as claimed in claim 1 or 2, wherein the sound reproduction system is a mobile telephone system.

17. A sound reproduction system as claimed in claim 1 or 2, wherein the signal processor is a digital signal processor (DSP).

18. A method for audio signal enhancement in or for a sound reproduction or recording system in which an incoming audio signal is processed wherein input signals are multiplied with a gain factor (z), said gain factor being a function of input level (y), wherein the functional relationship between gain factor (z) and an input level (y) is such that a first (I) and second range (II) for the gain factor are present, the first range (I) covering amplitudes in which mainly voiced phonemes are situated, the second range (II) situated at input levels (y) lower than those for the first range (I) and covering input levels in which mainly unvoiced phonemes are situated, wherein the functional relationship is such that the average gain factor for the first range (I) lies at least 6dB below that for the second range (II).

19. A method for audio signal enhancement in or for a sound reproduction or recording system wherein input signals are multiplied with a gain factor (z), said gain factor being a function of input level (y), wherein the functional relationship between gain factor (z) and an input level (y) is such that a first (I) and second range (II) for the gain factor are present, the first range (I) extending from a maximum value input level (MAX) downwards at least 10 dB, the second range (II) extending at input levels below the first range (II), said second range covering a range of 10 db or more, wherein the average gain factor (z) in the first range (II) is at least on average 6 dB lower than in the second range (II).

20. A method for audio signal enhancement as claimed in claim 18 or 19 wherein the functional relation ship between gain factor (z) and input level (y) is such that the gain factor in the first range (I) is at least 12 dB lower than in the second range (II).

21. A method for audio signal enhancement as claimed in claim 18 or 19, wherein the functional relation ship between gain factor (z) and input level (y) is such that the average gain factor is less than 12 dB, preferably less than 6dB, even more preferably less than 3 dB.

22. A method for audio signal enhancement as claimed in claim 18 or 19, wherein the functional relation ship between gain factor (y) and input level (y) is such that the first (I) and second (II) range are separated by a third, intermediate, range (III) in which the gain factor changes gradually.

23. A method for audio signal enhancement as claimed in claim 18 or 19, wherein the functional relationship between gain factor (z) and input level (y) is such that the second range (II) is, at a lower boundary value, juxtaposed by a fourth range (IV) in which the gain factor is substantially zero.

24. Method for audio signal enhancement as claimed in claim 23, wherein the functional relationship between gain factor (z) and input level (y) is such that the second (II) and fourth range (IV) are separated by a fifth (V), intermediate, range within which the gain factor gradually changes.

25. Method for audio signal enhancement as claimed in claim 22 and 24, wherein the functional relationship between gain factor (y) and input level (z) is such that the slope of the decrease in gain factor in the third range (III) is softer than the rise in gain factor in the fifth range (V).

26. Method for audio signal enhancement as claimed in claim 18, wherein the functional relationship between gain factor and input level is such that unvoiced phonemes are at least 6 dB more enhanced than voiced phonemes.

27. Method for audio signal enhancement in a sound reproduction system in which an incoming audio signal is digitally processed wherein input signals are multiplied with a gain factor (z), said gain factor being a function of input level (y), wherein the functional relationship between gain factor (z) and an input level (y) is such that unvoiced phonemes are at least 6 dB, preferably at least 12 dB more enhanced than voiced phonemes.

28. Method for audio signal enhancement as claimed in claim 27, wherein the functional relationship between gain factor and input level is such the overall loudness increase is less than 6 dB, preferably less than 3 dB.

29. Computer program comprising program code means for performing a method in accordance with any of the claims 18 to 28 when said program is run on a computer.

30. Computer program product comprising program code means stored on a computer readable medium for performing a method as claimed in claim 18 to 28 when said program is run on a computer.

31. Computer program product comprising program code means for use in a system as claimed in any of the claims 1 to 17, for performing the action specific for the invention.